



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/595,416	04/17/2006	Christian Herlt	HERL0101PUSA	9015
22045	7590	02/19/2010	EXAMINER	
BROOKS KUSHMAN P.C. 1000 TOWN CENTER TWENTY-SECOND FLOOR SOUTHFIELD, MI 48075			LAUX, DAVID J	
			ART UNIT	PAPER NUMBER
			3743	
			MAIL DATE	DELIVERY MODE
			02/19/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/595,416	Applicant(s) HERLT, CHRISTIAN	
	Examiner David J. Laux	Art Unit 3743	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 January 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This action is in response to applicant's submission dated 01/25/2010. Claim(s) 1-13 is/are pending.

Response to Arguments

1. Applicant's arguments filed 01/25/2010 have been fully considered but they are not persuasive. Applicant first argues that '909 to Milner fails to disclose depressions. As a point of clarification, in the previous rejection, examiner intended to point to element 32 in Fig. 1 of '909. Even though '909 has labeled element 32 as an ash layer, the ash layer is built up inside of a depression in the chamber. Furthermore, '909 states that ash rests in the depressions before being removed ('909: Col. 5, lines 4-10).
2. Applicant next argues that '165 to Rizzie fails to teach an ash separator tangentially connected to the outlet of a combustion chamber. Examiner disagrees. '165 teaches a cyclonic gas separator, a device which is well-known in the art. A cyclonic gas separator operates by tangentially supplying a dirty flue gas into a cylindrical vessel, which causes centrifugal forces (acting on the gases due to the tangential gas supply and cylindrical shape of the vessel) to force solid particles to the outside wall of the separator. '165 fails to go into specifics regarding the operation of the cyclonic gas separator because one having ordinary skill in the art would be familiar with the operational parameters of the device.
3. Addressing applicant's argument regarding claim 2, '909 shows depressions at element 32 in Fig. 1 which are parallel to the bottom of the combustion chamber.

Art Unit: 3743

4. Regarding applicant's final argument with respect to claim 5, examiner maintains the position that '165 teaches the claimed baffle plate. Regardless of the name '165 chose to use for the element, the baffle/casing 112 of '165 restricts air flow and reduces the likelihood of solids entering the clean flue gas duct 110, and thus acts as a baffle. As shown in Fig. 6 of '165, the baffle/casing 112 is attached to the bottom of clean flue gas duct 110. Regarding the requirement that the opening in the baffle plate be a relatively thin ring-like opening, those limitations have not been included in the claim language.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 1-13 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. With regard to claim 1, it is unclear what applicant means by using the limitation "...while not loading combustion gas flow." Examiner will assume that the limitation means that the ash particles do not interfere with the combustion gas flow. Appropriate action is required.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 3743

8. Claims 1-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. See the § 112, first paragraph rejection above as to why the limitation "... while not loading combustion gas flow" renders claim 1 indefinite. Appropriate action is required.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1-2, 4, 6, 8, 10 & 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,498,909 to Milner et al in view of US 5,901,653 to Jennebach et al and further in view of US 5,720,165 to Rizzie et al.

11. '909 discloses a gasification boiler for solid fuels, the boiler comprising: a fuel and gasification chamber (20) closable by a filling door (35) (Col. 3, lines 1-5) and having air feeds (43) and depressions (32 in Fig. 1) for collecting and holding ash (Col. 5, lines 10-14), the depressions (32 in Fig. 1) disposed adjacent to a grating (26) arranged at the bottom of the fuel and gasification chamber (20) and configured to allow coarse ash particles to outgas while not obstructing combustion gas flow (Fig. 1; Col. 5,

Art Unit: 3743

lines 4-10; see § 112 rejections above; ash is allowed to collect in the depressions and would not interfere with the upward flow of gas).

12. '909 fails to disclose a combustion chamber situated below the grating; a secondary combustion chamber connected to an outlet of the combustion chamber; or a heat exchanger. '653 teaches a combustion chamber (35) situated below a grating (26) (Fig. 1); a secondary combustion chamber (36) connected to an outlet of the combustion chamber (35) (Fig. 1); and a heat exchanger (Col. 7, lines 2-6). It would have been obvious for one skilled in the art at the time of invention to combine the gasifier of '909 with the syn-gas combustion chambers of '653 because such a combination would have produced the added benefit of a means for recovering energy from the syn-gas produced by the gasifier of '900 while reducing pollution by using a multi-stage combustion process.

13. '909 also fails to disclose a cylindrical ash separator located downstream from the secondary combustion chamber and connected at the top tangentially to an outlet of the secondary combustion chamber, the ash separator being connected to a known heat exchanger. '165 teaches a cylindrical ash separator (16) located downstream from a combustion chamber (122) (Fig. 1) and connected at the top tangentially to an outlet of the combustion chamber (122) (Fig. 1). It would have been obvious for one skilled in the art at the time of invention to combine the gasifier of '909 with the ash separator of '165 because such a combination would have produced the added benefit of a means for reducing particulate matter in the exhaust gas to reduce particulate pollution when the gas is exhausted into the environment.

Art Unit: 3743

14. With regard to claim 2, '909 further discloses the depressions (32 in Fig. 1) of the fuel and gasification chamber (20) are of half-shell-shaped design (Fig.2) and run parallel to the combustion chamber (20) (Figs. 1 & 2) and each depression (32 in Fig. 1) has a small door for the removal of ash (Col. 5, lines 10-16; double-valve is equivalent to a small door).

15. With regard to claim 4, '909 as combined with '165 further discloses a substantially vertical pipe (184) is arranged centrally within the ash separator (16) (Figs. 1, 4 & 6), the pipe (184) having a lower opening (116). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the lower opening of the pipe approximately halfway up a height of the ash separator (16) (Fig. 6), since shifting the location of parts of a device involves only routine skill in the art.

16. With regard to claims 6, 10 & 12, '909 as combined with '653 and '165 discloses the claimed invention except for the secondary combustion chamber, the ash separator and the heat exchanger being connected in a framework to form a constructional unit. It would have been obvious at the time the invention was made to connect the secondary combustion chamber, the ash separator and the heat exchanger in a framework to form a constructional unit, since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art. *Howard v. Detroit Stove Works*, 150 U.S. 164 (1893).

17. With regard to claim 8, '909 as combined with '165 further discloses a substantially vertical pipe (184) is arranged centrally within the ash separator (16) (Figs.

Art Unit: 3743

1, 4 & 6), the pipe (184) having a lower opening (116) approximately halfway up a height of the ash separator (16) (Fig. 6).

18. With regard to claims 10 & 12, '909 as combined with '653 and '165 discloses the claimed invention except for the secondary combustion chamber, the ash separator and the heat exchanger being connected in a framework to form a constructional unit. It would have been obvious at the time the invention was made to connect the secondary combustion chamber, the ash separator and the heat exchanger in a framework to form a constructional unit, since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art. *Howard v. Detroit Stove Works*, 150 U.S. 164 (1893).

19. Claims 3, 5, 7, 9, 11 & 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over '909 in view of '653 and '165 as applied to claims 1, 3 & 5 above, and further in view of US 6,758,149 to Oiwa et al.

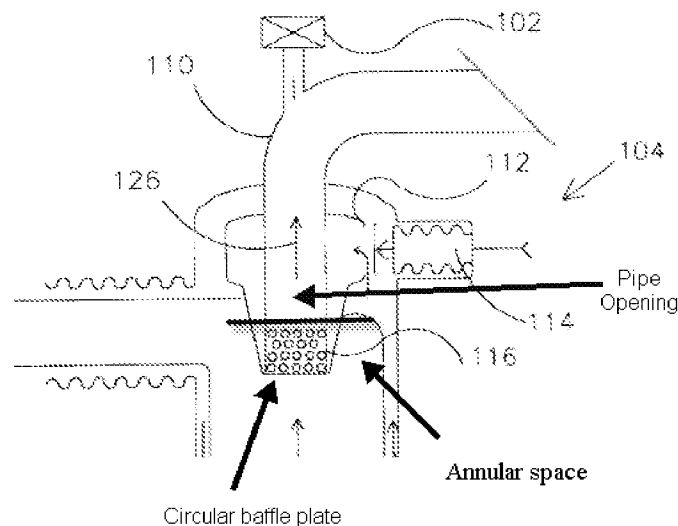
20. With regard to claims 3 & 7, '909 as combined with '653 further discloses the secondary combustion chamber ('653: 36) is cylindrical and connected at the bottom tangentially to the outlet of the combustion chamber ('653: 35) (Fig. 3; Col. 3, lines 2-5), so that the combustion gas rises therein in a swirling manner (Col. 6, lines 21-26).

21. '909 as combined with '653 and '165 fails to disclose a secondary combustion chamber that can be closed at the top by a cover. '149 teaches a combustion chamber (11) that is closed at the top by a cover (12). It would have been obvious for one skilled in the art at the time of invention to combine the gasifier of '909 as combined with '653 and '165 with the combustion chamber lid of '149 because such a combination would

Art Unit: 3743

have produced the added benefit of a way to easily clean the inside of the combustion chamber to prevent ash build-up.

22. With regard to claim 5, '909 as combined with '165 further discloses a circular baffle plate is fitted below the opening of the pipe (see Fig. 6 reproduced in part below) in such a manner that an annular opening ('165: 100) for the depositing of ash remains between an outer wall ('165: 96) of the ash separator ('165: 16) and the baffle plate (centrifugal forces force ash to the outer portion of the separator (the annular space) while allowing clean gases to flow through the pipe).



23. '909 as combined with '653 and '165 fails to disclose an ash separator that can be closed with a lid. '149 teaches a cylindrical vessel (11) that can be closed with a lid (12). It would have been obvious for one skilled in the art at the time of invention to combine the gasifier of '909 as combined with '653 and '165 with the cylindrical vessel lid of '149 because such a combination would have produced the added benefit of a way to easily clean the inside of the ash separator to prevent ash build-up.

Art Unit: 3743

24. With regard to claim 9, '909 as combined with '165 further discloses a substantially vertical pipe (184) is arranged centrally within the ash separator (16) (Figs. 1, 4 & 6), the pipe (184) having a lower opening (116). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the lower opening of the pipe approximately halfway up a height of the ash separator (16) (Fig. 6), since shifting the location of parts of a device involves only routine skill in the art.

25. With regard to claims 11 & 13, '909 as combined with '653 and '165 discloses the claimed invention except for the secondary combustion chamber, the ash separator and the heat exchanger being connected in a framework to form a constructional unit. It would have been obvious at the time the invention was made to connect the secondary combustion chamber, the ash separator and the heat exchanger in a framework to form a constructional unit, since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art. *Howard v. Detroit Stove Works*, 150 U.S. 164 (1893).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David J. Laux whose telephone number is (571) 270-7619. The examiner can normally be reached on M-F 9:00-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Rinehart can be reached on (571) 272-4881. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3743

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. J. L./
Examiner, Art Unit 3743
/Kenneth B Rinehart/
Supervisory Patent Examiner, Art Unit 3743

February 12, 2010